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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
DE030272US

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on _____

Signature _____

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Application Number	Filed
10/566,550	JANUARY 27, 2006

First Named Inventor: THOMAS JUSTEL

Art Unit	Examiner
1797	MCKANE, E. L.

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number _____.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Chris Ries/
Signature

Chris Ries
Typed or printed name

914-333-9632
Telephone number

August 14, 2008
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Elissa DeLuccy
Name of Appellant, assignee or registered representative

/Elissa DeLuccy/
Signature

2008 Aug 14
Date of Signature

PATENT
Case No. DE030272
(7790/491)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	)	
	)	
JUSTEL, THOMAS	)	
	)	Examiner: MCKANE, E. L.
Serial No.: 10/566,550	)	
	)	Group Art Unit: 1797
Filed: JANUARY 27, 2006	)	
	)	
For: APPARATUS FOR REDUCING CONTAMINANTS IN FLUID STREAM COMPRISING A DIELECTRIC BARRIER EXCIMER DISCHARGE LAMP	)	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please consider these Remarks for the above-identified application as set forth below.

-- REMARKS --

Review of the rejection of this Application is respectfully requested.

35 U.S.C. §103 Rejections

Obviousness is a question of law, based on the factual inquiries of 1) determining the scope and content of the prior art; 2) ascertaining the differences between the claimed invention and the prior art; and 3) resolving the level of ordinary skill in the pertinent art. *Graham v. John Deere Co.,* 383 U.S. 1, 148 USPQ 459 (1966). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). *See* MPEP 2143.03. The Appellants respectfully assert that the cited references fail to teach or suggest all the claim limitations.

A. Claims 1, 3-5, 7, 10, 11, 17, and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,194,821 to Nakamura (the *Nakamura* patent) in view of U.S. Patent No. 5,144,146 to Wekhof (the *Wekhof* patent).

The Appellants respectfully assert that the *Nakamura* patent and the *Wekhof* patent, alone or in combination, fail to disclose, teach, or suggest an apparatus for reducing contaminants in a fluid stream whereby the light source is a dielectric barrier excimer discharge lamp driven with a pulse having an excitation pulse duration between 1,000 and 0.100 microseconds alternating with an idle period between 10,000 and 1 microseconds, as recited in independent claim 1, or an apparatus for reducing contaminants in a gas stream including a dielectric barrier excimer discharge lamp driven with a pulse having an excitation pulse duration less than or equal to 1 microsecond alternating with an idle period of about 100 microseconds, as recited in independent claim 17. As noted by the Examiner on page 2 of the Office Action dated May 14, 2008, the excimer lamp of Nakamura is not pulse operated. Thus, the *Nakamura* patent fails to disclose a dielectric barrier excimer discharge lamp driven with a pulse, as recited in independent claims 1 and 17.

Regarding independent claims 1 and 17, the *Wekhof* patent at most discloses a method for destruction of toxic substances with ultraviolet radiation in which the switching circuit arrangement and lamp provides a peak current that can be reached with a rise time of about 7 microseconds. *See* Figure 2; column 4, line 51 through column 5, line 12. The rise time of about

7 microseconds in the *Wekhof* patent is greater than the excitation pulse duration of less than or equal to 1 microsecond recited in independent claim 17. In addition, the Appellants respectfully disagree with the Examiner's assertion that the excitation pulse duration is twice the rise time, i.e., 14 microseconds, as maintained in the Advisory Action dated July 25, 2008. The *Wekhof* patent is silent as to the shape of the pulse and whether the pulse is maintained at the peak value, so it is not possible to deduce the duration of the pulse. Therefore, the *Wekhof* patent fails to disclose a value for the excitation pulse duration as recited in independent claims 1 and 17.

Regarding independent claim 17, the *Wekhof* patent at most discloses a method for destruction of toxic substances wherein a UV source is pulsed at a repetition rate in the range of 5 to 100 Hertz (Hz). *See* column 4, lines 9-10. This corresponds to a period of 10,000 to 200,000 microseconds (1/f). Independent claim 17 recites an excitation pulse duration less than or equal to 1 microsecond alternating with an idle period of about 100 microseconds, which sums to a maximum period of about 101 microseconds. This is an order of magnitude less that the period disclosed in the *Wekhof* patent. Therefore, the *Wekhof* patent fails to disclose an excitation pulse duration less than or equal to 1 microsecond alternating with an idle period of about 100 microseconds as recited in independent claim 17. As noted in the present Application on page 4, lines 5-8, the dielectric-barrier discharge lamp efficiency for VUV production from a Xe_2* lamp (172 nm) can be dramatically increased by a factor of at least two, preferably three or more compared to AC excitation by using fast excitation pulses of $\leq$ 1 microseconds (μs) duration followed by idle periods of about 100 microseconds (μs).

Regarding dependent claim 11, the *Nakamura* patent and the *Wekhof* patent fail to disclose the excitation pulse duration being less than or equal to 1 microsecond and the idle period being about 100 microseconds as claimed. As discussed for independent claim 17 above, the period from adding the excitation pulse duration and idle period as claimed is an order of magnitude less that the period disclosed in the *Wekhof* patent.

Claims 3-5, 7, 10, and 11, and claim 21 depend directly from independent claims 1 and 17, respectively, and so include all the elements and limitations of their respective independent claims. The Appellants therefore respectfully submit that the dependent claims are allowable

over the *Nakamura* patent and the *Wekhof* patent for at least the same reasons as set forth above for their respective independent claims.

Withdrawal of the rejection of claims 1, 3-5, 7, 10, 11, 17, and 21 under 35 U.S.C. §103(a) as being unpatentable over the *Nakamura* patent in view of the *Wekhof* patent is respectfully requested.

B. Claims 12-15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the *Nakamura* patent in view of U.S. Patent No. 5,925,320 to Jones (the *Jones* patent)–

The Appellants respectfully assert that the *Nakamura* patent and the *Jones* patent, alone or in combination, fail to disclose, teach, or suggest an apparatus for reducing contaminants in a fluid stream wherein the sensor activates a number of the plurality of light sources dependent on the pollutant load present in the fluid stream, as recited in independent claim 12. As noted by the Examiner on page 5 of the Office Action dated May 14, 2008, the *Nakamura* patent fails to disclose a pollutant sensor. Thus, the *Nakamura* patent fails to disclose the sensor activating a number of the plurality of light sources dependent on the pollutant load present in the fluid stream, as recited in independent claim 12.

The *Jones* patent at most discloses an air purification system with a secondary activation switch 92 that may include circuitry for sensing the level of ambient air contamination and automatically activating when a predetermined level of contamination is sensed. *See* Figure 2; column 4, lines 43-52. The *Jones* patent discloses activating the single UVC source 80 when the contamination level exceeds a threshold. Thus, the *Jones* patent fails to disclose the sensor activating a number of the plurality of light sources dependent on the pollutant load present in the fluid stream, as recited in independent claim 12.

Regarding claim 14, the *Nakamura* patent and the *Jones* patent fail to disclose the sensor being further operable to control pollutant load in the fluid stream as claimed.

Regarding claim 15, the *Nakamura* patent and the *Jones* patent fail to disclose the sensor being further operable to control dielectric barrier excimer discharge lamp function as claimed.

Claims 13-15 depend directly from independent claim 12 and so include all the elements and limitations of independent claim 12. The Appellants therefore respectfully submit that the

dependent claims are allowable over the *Nakamura* patent and the *Jones* patent for at least the same reasons as set forth above for independent claim 12.

Withdrawal of the rejection of claims 12-15 under 35 U.S.C. §103(a) as being unpatentable over the *Nakamura* patent in view of the *Jones* patent is respectfully requested.

C. Claims 2, 6, 9, 16, 18, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over various references.

Claims 2, 6, 9, 16, 18, 19, and 20 depends variously from independent claims 1, 12, and 17, and so include all the elements and limitations of their respective independent claims. The Appellants therefore respectfully submit that dependent claims 2, 6, 9, 16, 18, 19, and 20 are allowable over the various references for at least the same reasons as set forth above for their respective independent claims.

Withdrawal of the rejection of claims 2, 6, 9, 16, 18, 19, and 20 under 35 U.S.C. §103(a) is respectfully requested.

SUMMARY

Allowance of the claims in the subject case is requested in light of the above remarks.

Dated: **August 13, 2008**

Respectfully submitted,
THOMAS JUSTEL, *et al.*

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